

# EC124-15 Statistical Techniques B

**23/24**

**Department**

Economics

**Level**

Undergraduate Level 1

**Module leader**

Jeremy Smith

**Credit value**

15

**Module duration**

10 weeks

**Assessment**

Multiple

**Study location**

University of Warwick main campus, Coventry

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## Description

### Introductory description

This module provides students with a thorough understanding in basic principles of statistics. You will gain an understanding of probability theory, calculating moments of univariate and multivariate distributions (including some commonly used special distributions), hypothesis testing and confidence intervals. You will gain an understanding of how programme within the statistical package, thereby enabling the presentation of statistical data in a meaningful way (tables, graphs), how to develop hypothesis tests from the data.

[Module web page](#)

### Module aims

To develop undergraduate students' statistical and computing skills for analysing real world data: students will be given an introduction to advance statistical software packages and will learn about data description and analysis. This module will provide the requisite quantitative background for a thorough and rigorous study of economic analysis, econometric methods and applied economics subjects, commensurate with the single honours Economics course.

To offer a sufficient challenge for students who enter Warwick with a high grade in A-level mathematics and/or statistics.

## Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

The module will typically cover the following topics:

Descriptive statistics; Probability; Discrete random variables; Binomial and Poisson distributions; Bivariate distributions; covariance and correlation; Continuous random variables; uniform and normal distributions; Limit theorems; Sampling and sampling distributions; Hypothesis testing and confidence intervals; Non-parametric testing.

## Learning outcomes

By the end of the module, students should be able to:

- have acquired the statistical techniques necessary to study core and optional first and second year modules in economics;
- develop further your knowledge of statistical methods and statistical modelling
- have gained an awareness of data and of data handling through the use of statistical software.

## Indicative reading list

The basic practice of statistics by David S. Moore; William Notz; Michael A. Fligner 2018  
Statistics for Business and Economics, Global Edition by Paul Newbold; William Carlson; Betty Thorne

Statistics: learning from data by T. A. Short; Roxy Peck 2018

[View reading list on Talis Aspire](#)

## Subject specific skills

Students will acquire the tools of quantitative methods necessary to study core and optional first and second year modules in economics for joint honours courses in Economics. They will develop further their techniques of statistical methods and statistical modelling; and generate an awareness and analysis of data, of data handling using appropriate statistical software and of report writing.

## Transferable skills

Students will develop their research, team-work, data-base management, analytical and communication skills.

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## Study

## Study time

Type	Required
Lectures	10 sessions of 2 hours (13%)
Seminars	4 sessions of 1 hour (3%)
Demonstrations	4 sessions of 1 hour (3%)
Private study	122 hours (81%)
Total	150 hours

## Private study description

The private study time will allow students time to prepare for their seminars, revise for class tests and develop their skills to become independent learners.

Through independent reading and discussion with others, students will be exposed to a variety of viewpoints, learn to choose among them, and you will be better prepared to develop your own distinctive ideas.

## Costs

No further costs have been identified for this module.

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## Assessment

You do not need to pass all assessment components to pass the module.

### Assessment group D2

	Weighting	Study time
Test	10%	
A 60 minute class test		
1200 word Statistical Project	20%	
1200 word statistical project undertaken as part of groupwork.		
5 x problem sets	10%	
Five problem sets (2% each). One aggregated mark to be given for all 5 problem sets.		
Online Examination	60%	
A paper which examines the course content and ensures learning outcomes are achieved.		
~Platforms - AEP		

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## Weighting

## Study time

- Online examination: No Answerbook required
- Students may use a calculator
- Economics dept. statistical tables (yellow/ red)

## Assessment group R1

### Weighting

### Study time

Online Examination - Resit

100%

A paper which examines the course content and ensures learning outcomes are achieved.

~Platforms - AEP

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- Online examination: No Answerbook required
  - Students may use a calculator
  - Economics dept. statistical tables (yellow/ red)

## Feedback on assessment

The Department of Economics is committed to providing high quality and timely feedback to students on their assessed work, to enable them to review and continuously improve their work. We are dedicated to ensuring feedback is returned to students within 20 University working days of their assessment deadline. Feedback is returned on a standardised assessment feedback cover sheet which gives information both by tick boxes and by directed comments. Students are informed how to access their feedback, either by collecting from the Undergraduate Office, from seminar tutors or within their seminar group sessions. Module leaders provide generic feedback for the cohort in addition to the individual-specific feedback on assessment performance.

[Past exam papers for EC124](#)

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## Availability

### Pre-requisites

A level Mathematics, or equivalent.

## Courses

This module is Core for:

- UECA-3 Undergraduate Economics 3 Year Variants

- Year 1 of L100 Economics
- Year 1 of L100 Economics
- Year 1 of L100 Economics
- Year 1 of L116 Economics and Industrial Organization
- Year 1 of L116 Economics and Industrial Organization

This module is Core optional for:

- Year 1 of UIPA-L1L8 Undergraduate Economic Studies and Global Sustainable Development
- Year 1 of UPHA-L1CA Undergraduate Economics, Psychology and Philosophy
- UPHA-V7ML Undergraduate Philosophy, Politics and Economics
  - Year 1 of V7ML Philosophy, Politics and Economics (Tripartite)
  - Year 1 of V7ML Philosophy, Politics and Economics (Tripartite)
  - Year 1 of V7ML Philosophy, Politics and Economics (Tripartite)

This module is Core option list A for:

- Year 1 of UIPA-L1L8 Undergraduate Economic Studies and Global Sustainable Development
- Year 1 of ULNA-R1L4 Undergraduate French and Economics (4-year)

This module is Core option list B for:

- UECA-LM1D Undergraduate Economics, Politics and International Studies
  - Year 1 of LM1D Economics, Politics and International Studies
  - Year 1 of LM1D Economics, Politics and International Studies
- Year 1 of ULNA-R4L1 Undergraduate Hispanic Studies and Economics (4-year)
- Year 1 of ULNA-R9L1 Undergraduate Modern Languages and Economics (4-year)
- UPHA-V7ML Undergraduate Philosophy, Politics and Economics
  - Year 1 of V7ML Philosophy, Politics and Economics (Tripartite)
  - Year 1 of V7ML Philosophy, Politics and Economics (Tripartite)
  - Year 1 of V7ML Philosophy, Politics and Economics (Tripartite)

This module is Core option list C for:

- Year 1 of ULNA-R2L4 Undergraduate German and Economics (4-year)
- Year 1 of ULNA-R3L4 Undergraduate Italian and Economics (4-year)